

WORK PROCESS SCHEDULE
Energy Auditor and Analyst
for Residential Retrofit Market (existing homes)
O*NET-SOC Code: 13-1199.01 RAPIDS Code: 2005HY

Schedule of Work Experience (OJL) and Training considered necessary to develop a skilled and productive worker.

	Min. - Max. Hours
Course General Knowledge Construction	165 - 410
Description: Students will demonstrate and apply general knowledge of residential construction to include construction safety; OSHA rules and regulations, first aid, CPR, and completion of MSDS forms; basic knowledge and safe use of hand and power tools; basic understanding of blueprint reading and layout and building codes, construction math, materials used in residential construction; insulation and sound control; water and vapor barrier; and employer/employee relationships.	
Course Contractor Installation/Retrofit	650 - 900
Description: Student must assist with contracting retrofit work to demonstrate knowledge of basics principals including health and safety/MSDS sheets, interpretation of energy audits, building air sealing, insulation types and applications, attic ventilation-calculating and balancing, soffit venting/roof venting, basement and crawlspaces, windows/doors sealing and replacement and professional ethics, conduct and communications.	
Course Application of Advanced Equipment	320 - 520
Description: Students will successfully demonstrate the ability to conduct without assistance at least 30 home energy audits including utilization of all major equipment and software. Student must also demonstrate ability to interpret software results and write thorough work-scopes for the retrofits.	
Course Application of Home Performance Sales and Marketing	316.5 - 520
Description: Students will successfully demonstrate the ability to perform energy audits and presentation of the results to homeowners. Students must demonstrate competence of explaining the results of the energy audit to the homeowner and their options as applicable in possible retrofits. In this process student will demonstrate knowledge of home performance contracting basics, sales presentation ability, audit procedures, interacting with homeowner, closing the sale, executing the project and ability to effectively work with subcontractors as needed.	

Course **General Knowledge Energy Auditing/Analyst** 325 - 550

Description: Students will demonstrate and apply general knowledge of Building Science principals to include: house as a system, health and safety, thermal and pressure boundaries, air sealing, blower door technology and testing, building calculations, building air flow and ventilation, combustion safety testing, advanced equipment principals, application of software, interpretation of energy audits, building air sealing, insulation types and applications, attic ventilation-calculating and balancing, soffit venting/roof venting, basement and crawlspaces, windows/doors sealing and replacement and professional ethics, conduct and communications and knowledge of using an energy audit for home performance sales and marketing.

Course **Application of Heating Professional and A/C or Heat Pump** 223.5 - 450

Description: Students must assist contractors with installation and upgrades of HVAC systems to demonstrate basic knowledge of HVAC systems and their relationship to Energy Audits and the Home Retrofit Market. Students must demonstrate the knowledge to properly size and evaluate systems in conjunction with the “whole home approach” to evaluating the energy efficiency of a home.

Total OJL hours:

2000 - 3350

RELATED INSTRUCTION OUTLINE
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RTI PROVIDED BY SPONSOR AND CONTRACTORS RTI Hrs.

Course **Construction Math** 90

Description:

This course introduces students to construction math and will instruct students in solve building construction problems. This will consist of two technician math courses with a review of basic mathematics: whole numbers, fractions, decimals, percentages, measurement and pre-algebra. Emphasis on problem solving related to construction trades covering algebra, geometry, and trigonometry. Topics include algebra -quadratic equations, graphs and tables; and geometry-straight lines and angles and two and three dimension shapes. This class will also include blue print reading.

Course **Safety** 30

Description:

This course is designed to introduce students to construction safety standards as outlined by the Occupational Safety and Health Administration (OSHA) and basic first aid for construction hazards commonly referred to as the OSHA 10 hour curriculum. In addition students will receive state certification in lead and asbestos abatement. Topics may also include mold and confined spaces.

Course **Fundamentals of Information Technology** 75

Description:

This course will introduce the student to the fundamental concepts and applications associated with the current generation of computer technology. Students will study terminology as it applies to computers, networks, operating systems, and internet usage. This course includes a hands-on component where students will work with productivity software such as Microsoft (XP) in word processing, spreadsheets, and databases within the Windows Operating System. An additional course will be provided to cover Using the Internet and will focus on the logical makeup of the Internet and World Wide Web including e-mail management, browser usage, search engine strategies, and online security.

Course **Fundamental Business Skills for Energy Auditors and Analysts** 120

Description:

This will include 3 primary courses with emphasis on basic business skills that are essential to the energy auditor and building analyst profession. This will include courses in Interpersonal Communications, Fundamentals of Selling and Foundations of Entrepreneurship. Interpersonal skills will focus on developing speaking, verbal and

camera together and using the results to evaluate the building envelope. Writing a work scope from the infrared thermal images and training in software reporting.

Combustion Safety testing - The students will learn the procedures of combustion safety testing as well as the importance of testing. They will learn the procedures for Combustion Appliance Zone (CAZ) depressurization testing, combustion appliance testing, gas leak testing, and computer assisted combustion safety testing.

Duct Leak - The students will learn the duct leakage basics, duct leakage equipment operation, the use of computer software with duct leakage equipment and writing an effective work scope for repairs. Duct work leakage repair will include the review of products and procedures used in the repair and their applications.

Energy Auditing software - The students will learn the procedures for entering the audit information into a DOE/EPA (BESTEST EX) approved software with an emphasis on data collection procedures and accurate interpretation of results.

Course **Home Performance Sales and Marketing** 22.5

Description: This training program will provide a foundation for the necessary skills and procedures for selling and marketing Home Performance contracting to the home owner. The program takes the student from the beginning interview to completing the sale. Topics covered will include how the energy audit provides the energy solutions for the clients home, how to implement the improvements and how to generate referrals. Other topics covered include home performance contracting basics, tools of the trade, sales presentations, audit procedures, interacting with the homeowner, closing the sale, executing the project, working with subcontractors, and follow up and creating referrals.

Course **Envelope Professional** 24

Description: This training, which includes both classroom sessions and field experience, will help students prepare for written and field exams that will include advanced knowledge in how a building's envelop must function with the other systems in the building. Training will include review of some Building Analyst topics. Students will learn more about a house as a system including moisture, thermal boundaries, pressure boundaries, mechanical ventilation, pressure diagnostics, and distribution systems.

Course **Heating Professional and A/C or Heat Pump Professional** 56

Description: Using a "whole house" performance-based approach, this training will cover advanced heating system diagnostic, evaluation, and repair skills. Training will include review of some Energy Auditor topics, but will focus on the HVAC system side. This course covers the fundamentals elements of a HVAC system in relation to the basics of combustion and proper equipment set up, venting and drafting of different types of appliances, oil fired space heating set up for optimum efficiency, pressure diagnostics as it relate to the HVAC system and the impact it has on the home, along with all the industry standard design requirements needed for a optimum working HVAC system in regards to heat loads, duct design, and minimum airflow requirements. This

second course of this series consisting of both classroom and field experience, will introduce the student to AC/Heat Pump systems. This course covers the fundamentals as they relate to Air Conditioning and Heat Pump systems. The training will teach the importance of properly sizing the system to meet the requirements of the home, duct system airflow performance and how it impacts the comfort and efficiency of the HVAC system, importance of proper refrigerant charging based on superheat and sub-cooling, room by room pressure testing and how the HVAC system affects the pressure balance of the entire home, the basics of electrical requirements for high voltage, and industry standards for cooling load requirements, duct design, and airflow requirements .

Sub-total RTI hours

537.5